

Patent Application No. 09/682,417

IN THE CLAIMS:

Please amend claims 1 and 7, cancel claims 2 and 3, and add new claims 9-14 as follows:

Claim 1 (amended) An optical amplitude demodulator for demodulating signals received from a fibre optic link comprising:

5 a plurality of optical sensors for detecting optical output from the fibre optic link, each of the optical sensors having a different detection threshold, the plurality of optical sensors producing a plurality of digital outputs corresponding to the optical output level detected;~~and~~
a priority encoder for encoding the digital outputs into a multi-bit digital signal; and

10 wherein each of the plurality of optical sensors has an associated optical filter, each of said filters having a different level of opaqueness, for filtering received optical output prior to detection by the optical sensor.

Claim 2 (canceled)

Claim 3 (canceled)

Claim 4 (original) An optical amplitude demodulator as claimed in claim 1 wherein:
the detection thresholds are programmable.

Claim 5 (original) An optical amplitude demodulator as claimed in claim 1 wherein:
said plurality of optical sensors comprises 2^N individual optical sensors.

Claim 6 (original) T An optical amplitude demodulator as claimed in claim 5, in which $N=4$.

Claim 7 (amended) An optical amplitude demodulator ~~as claimed in claim 1, in which~~ for demodulating signals received from a fibre optic link comprising:

5 a plurality of optical sensors for detecting optical output from the fibre optic link, each of the optical sensors having a different detection

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threshold, the plurality of optical sensors producing a plurality of digital outputs corresponding to the optical output level detected; and
a priority encoder for encoding the digital outputs into a multi-bit digital signal; and

10 wherein each of said optical sensors is a PIN diode.

Claim 8 (original) An optical amplitude demodulator as claimed in claim 1, in which each of said optical sensors is a PIN transistor.

Claim 9 (new) An optical amplitude demodulator for demodulating signals received from a fibre optic link comprising:

5 a plurality of optical sensors for detecting optical output from the fibre optic link, each of the optical sensors having a different detection threshold, the plurality of optical sensors producing a plurality of digital outputs corresponding to the optical output level detected;

 a priority encoder for encoding the digital outputs into a multi-bit digital signal; and

10 wherein each of the plurality of optical sensors has a different level of semiconductor diffusion, causing the optical output received by each of said plurality of optical sensors to differ according to the level of diffusion.

Claim 10 (new) An optical amplitude demodulator as claimed in claim 9 wherein:

 the detection thresholds are programmable.

Claim 11 (new) An optical amplitude demodulator as claimed in claim 9 wherein:

 said plurality of optical sensors comprises 2^N individual optical sensors.

Claim 12 (new) T An optical amplitude demodulator as claimed in claim 11, in which $N=4$.

Claim 13 (new) An optical amplitude demodulator as claimed in claim 9, in which each of said optical sensors is a PIN diode.

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Claim 14 (new) An optical amplitude demodulator as claimed in claim 9, in which each of said optical sensors is a PIN transistor.